

## CLAIMS

What is claimed is:

- 1 1. A method comprising:  
2 preparing capability information of each of a plurality of devices with  
3 regard to signal formats;  
4 designating a device that ultimately receives a signal;  
5 collecting the capability information of every one of the plurality of devices;  
6 producing a plurality of possible transmission paths between the receiving  
7 device and other devices, based on the capability information collected;  
8 identifying a device that transmits a signal and a format of the transmitted  
9 signal;  
10 selecting one of the plurality of possible transmission paths that matches  
11 the transmitting device and the transmitted signal format for a transmission path.  
12 issuing commands to the plurality of devices involved in the selected  
13 transmission path; and  
14 controlling input/output of the plurality of devices according to the issued  
15 commands to establish the transmission path.
- 1 2. The method of claim 1, wherein the capability information comprises  
2 receiving, transmitting and converting information.
- 1 3. The method of claim 1, wherein  
2 the possible transmission paths are specified in terms of the order of devices  
3 involved in the transmission paths and a signal format between the devices  
4 involved.
- 1 4. The method of claim 2, wherein the producing step comprises:  
2 seeking other devices capable of transmitting a signal in the same formats  
3 as the receiving device is capable of receiving.
- 1 5. The method of claim 4, wherein  
2 the producing step comprises

3 seeking other devices that are capable of converting a signal into the  
4 formats that the receiving device is capable of receiving;  
5 ordering the converting devices before the receiving device;  
6 seeking other devices that are capable of transmitting a signal in the  
7 format that the converting devices are capable of converting from; and  
8 ordering the transmitting devices before the converting devices.

1 6. The method of claim 5, wherein  
2 the capability information for each of the plurality of devices is originally  
3 possessed in each of the plurality of devices.

1 7. The method of claim 6, wherein  
2 the plurality of devices communicate with each other to collect the  
3 capability information.

1 8. The method of claim 1, further comprising:  
2 displaying the selected transmission path on a monitor.

1 9. An apparatus comprising:  
2 a means for storing capability information regarding signal formats for  
3 each of a plurality of devices;  
4 an analog input terminal;  
5 a memory for storing capability information of other devices coupled to a  
6 digital interface;  
7 a digital input/output terminal coupled to the memory;  
8 a decoder coupled to the digital interface; and  
9 a controller which refers to contents in the information storage means and  
10 the memory to produce possible transmission paths based on the capability  
11 information stored in the information storage means and the memory, wherein  
12 the controller comprises a command generator for issuing commands to devices  
13 involved in the possible selected transmission paths.

1 10. The apparatus of claim 9, wherein the capability information comprises  
2 receiving, transmitting and converting information.

1 11. The apparatus of claim 9, wherein the controller further comprises a  
2 selector for selecting one of an output of the decoder and the analog terminal.

1 12. The apparatus of claim 11, wherein the selector is coupled to a switch,  
2 wherein the switch is removably coupled to one of an output of the decoder and  
3 the analog terminal.

1 13. The apparatus of claim 12, wherein  
2 the controller selects one of the possible transmission paths according to a  
3 transmitting device and a transmitted signal format.

1 14. The apparatus of claim 13, wherein the switch is automatically controlled  
2 by the selector.

1 15. The apparatus of claim 9, wherein  
2 the information storage means is a configuration ROM.

1 16. The apparatus of claim 15, wherein  
2 the memory is a random access memory; and  
3 the capability information of other devices is collected through the digital  
4 input/output terminal and stored in the random access memory.

1 17. The apparatus of claim 9, wherein  
2 the controller operates according to a series of instructions.

1 18. The apparatus of claim 9, further comprising:  
2 a monitor for displaying the selected transmission path.

1 19. A method comprising:  
2 preparing capability information of each of a plurality of devices with  
3 regard to signal formats;

4 designating a device that ultimately receives a signal;  
5 collecting the capability information of every one of the plurality of devices;  
6 producing a plurality of possible transmission paths between the receiving  
7 device and other devices, based on the capability information collected;  
8 identifying a device that transmits a signal and a format of the transmitted  
9 signal;  
10 selecting one of the plurality of possible transmission paths that matches  
11 the transmitting device and the transmitted signal format for a transmission path.  
12 issuing commands to the plurality of devices involved in the selected  
13 transmission path;  
14 controlling input/output of the plurality of devices according to the issued  
15 commands to automatically establish the transmission path; and  
16 displaying the selected transmission path on a monitor.

1 20. The method of claim 19, wherein the capability information comprises  
2 receiving, transmitting and converting information.

1 21. The method of claim 19, wherein  
2 the possible transmission paths are specified in terms of the order of devices  
3 involved in the transmission paths and a signal format between the devices  
4 involved.

1 22. The method of claim 21, wherein the producing step comprises:  
2 seeking other devices capable of transmitting a signal in the same formats  
3 as the receiving device is capable of receiving.

1 23. The method of claim 21, wherein  
2 the producing step comprises  
3 seeking other devices that are capable of converting a signal into the  
4 formats that the receiving device is capable of receiving;  
5 ordering the converting devices before the receiving device;  
6 seeking other devices that are capable of transmitting a signal in the  
7 format that the converting devices are capable of converting from; and

ordering the transmitting devices before the converting devices.

24. The method of claim 19, wherein  
the capability information for each of the plurality of devices is originally  
possessed in each of the plurality of devices.

25. The method of claim 19, wherein  
the plurality of devices communicate with each other to collect the  
capability information.

26. An apparatus comprising:  
a means for storing capability information regarding signal formats for  
each of a plurality of devices;  
an analog input terminal;  
a memory for storing capability information of other devices coupled to a  
digital interface;  
a digital input/output terminal coupled to the memory;  
a decoder coupled to the digital interface;  
a monitor coupled to one of an output of the decoder and the analog input  
terminal; and  
a controller which refers to contents in the information storage means and  
the memory to produce possible transmission paths based on the capability  
information stored in the information storage means and the memory, wherein  
the controller comprises a command generator for issuing commands to devices  
involved in the possible selected transmission paths to automatically control  
connections of devices and a selector for selecting one of an output of the  
decoder and the analog terminal.

27. The apparatus of claim 26, wherein the capability information comprises  
receiving, transmitting and converting information.

1 28. The apparatus of claim 26, wherein the selector is coupled to a switch,  
2 wherein the switch is removably coupled to one of an output of the decoder and  
3 the analog terminal.

1 29. The apparatus of claim 28, wherein  
2 the controller automatically selects one of the possible transmission paths  
3 according to a transmitting device and a transmitted signal format.

1 30. The apparatus of claim 29, wherein the switch is automatically controlled  
2 by the selector.

1 31. The apparatus of claim 26, wherein  
2 the information storage means is a configuration ROM. 32. The  
3 apparatus of claim 26, wherein  
4 the memory is a random access memory; and  
5 the capability information of other devices is collected through the digital  
6 input/output terminal and stored in the random access memory.